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A Comparative Study of English and Javanese Sound Inventories

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Abstract

This essay aims at comparing and contrasting the English and Javanese with respect to the sound inventories completed. Based on Maddieson's research (cited in Aronoff & Ress-Miller 2003, p. 183) there are between six and 95 consonants and between three and 46 vowels in a language. While English has 24 consonants and 12 vowels (Fromkin et al. 2008, p. 216) and Javanese has 23 consonants and 6 vowels (Ager 2009; Wedhawati & Arifin 2006, p. 65). In sum, the sound the English and Javanese inventories are both similar and different in several respects to how their consonants and vowels are produced and where in the mouth they are produced. Additionally, by comparing two languages, it can be seen that some sounds exist in one language but does not exist in another.

Keywords: Sound inventories, Vowel, Consonant

Introduction

Sounds are the smallest units which make up utterances (Fromkin et al. 2008, p. 212). Every language has different sound inventory which are comprised consonants and vowels (Burns & Seidlhofer 2002, pp. 211-232). Consonant are sounds with constriction in the vocal tract while vowels are not. Based on Maddieson's research (cited in Aronoff & Ress-Miller 2003, p. 183) which focused on the sound inventories of 317 languages, there are between six and 95 consonants and between three and 46 vowels in a language. English has 24 consonants and 12 vowels (Fromkin et al. 2008, p. 216). Meanwhile, Javanese has 23 consonants and 6 vowels (Ager 2009; Wedhawati & Arifin 2006, p. 65). The essay will compare and contrast English and Javanese with respect to the sound inventories completed with some examples.

English is an international language. In contrary, Javanese is a local language spoken in Java, Indonesia. Yogyakarta and Solo are the central of Javanese language as the *Kraton* (palaces) in these places still maintain Javanese (Joglosemar n.d). However, Javanese grammar books are very rare. Mostly, its grammar books are written in Javanese or Indonesian languages and circulated in Indonesia. Viewed from the sound inventories of English and Javanese, there are not only several points of differences but also similarities. Regarding to the consonant inventory, consonant sounds are identified from their manner and place of articulation. The manner of articulation refers to oral, nasal, fricatives, affricatives, laterals, and glides while, places of articulation consist of bilabial, dental, alveolar, palatal, velar and glottal (Fromkin et al. 2008; Aronoff & Ress-Miller 2003, p. 181).

Results and Discussion

The first comparison related to the consonant characteristics of the manner of articulation is the oral sounds. They are produced when the air escapes only through the oral cavity (Fromkin et al. 2008, p. 222). Both English and Javanese share in the same way in [b], [d], [g], [p], [t], and [k] sounds (Fromkin et al. 2008; Wedhawati & Arifin 2006). In English, they are illustrated in the words *baby* [**b**eɪ**b**i], *dig* [**d**ɪg], *gain* [**g**eɪn], *space* [s**p**eɪs], *stiff* [s**t**ɪf], and *scan* [s**k**æn] while in Javanese they are in the words *babu* [**b**a**b**u] 'servant', *dino* [**d**inɔ] 'day', gula [**g**ulɔ] 'sugar', *sepur* [s**p**ur] 'train', duit [duwe**t**] 'money', and resik [rəse**k**] 'clean'.

The second comparison in term of the manner of consonant articulation is the nasal sounds. They are produced when air comes out through the nose and mouth (Fromkin et al. 2008, p. 222). English and Javanese share the same nasal of [m], [n], and [ŋ] (Fromkin et al. 2008; Wedhawati & Arifin 2006). For example, *mind* [**m**ai**n**] and *sink* [sɪ**ŋ**k] in English, and *mikir* [**m**ɪkɪr] 'think', *papan* [papa**n**] 'place' and *ngarep* [**ŋ**arəp] 'front' in Javanese. However, English and Javanese differ in [ɳ] and [ɲ] which are lacking for English. The sound [ɳ] is a nasal retroflex, while the sound [ɲ] is a nasal palatal (Dixit 1998, pp. 51-57). The nasal retroflex is a combination between the nasal as its manner of articulation and retroflex as its place of articulation. The [ɳ] in *mangan* [maŋaɳ] 'to eat' is produced by releasing the air through the nasal cavity and is articulated with the tip of the tongue curled up back behind the alveolar ridge. Meanwhile, the [ɲ] is a combination of nasal and palatal which is articulated with the front part of the tongue raised to a point on the hard palate (Wedhawati & Arifin 2006), for instance, *banyak* [ba**ɲ**ak] 'a goose'.

The third comparison based on the consonant characteristics under the manner of articulation is the fricative sounds. They are produced when the airflow is much obstructed that causes friction (Fromkin et al. 2008, p. 224). English has nine fricative sounds: [f], [v], [ɵ], [ð], [s], [z], [h], [ʃ], and [ʒ] which can be seen in *fiction* [**f**ɪk**ʃ**ən], *vacate* [**v**əkeɪt], *thing* [**ɵ**ɪŋ], *their* [**ð**eər], *sinus* [**s**aɪnə**s**], *zone* [**z**oʊn], *hope* [**h**oʊp], and *measurement* [me**ʒ**ə**ʒ**ment]. In contrast, Javanese has four fricatives (Wedhawati & Arifin 2006): [f] in *foto* [**f**oto] 'photo', [s] in *siji* [**s**ɪdʒɪ] 'one', [ʂ] in *sepisan* [**ʂ**epɪsan] 'once', and [h] in hawa [**h**ɔwɔ] 'air'. Among those all sounds above, the vivid difference is on the sound [ʂ], a voiceless retroflex fricative. It is like sound between [s] and [z]. The fourth comparison related to the consonant characteristics under the manner of articulation is affricative, both English and Javanese have two same affricates sounds: [ʧ] and [ʤ]. In English, both can be seen in the words *chick* [**ʧ**ɪk] and *jungle* [**ʤ**ʌŋgl]. In Javanese, these sounds can be found in *waca* [wɔ**ʧ**ɔ] 'to read' and *ajrih* [a**ʤ**rɪh] 'afraid' respectively.

The fifth comparison on the manner of consonant articulation is the lateral [l]. It is produced when sides of tongue are raised and air escapes through the sides of mouth (Fromkin et al. 2008, p.225). English and Javanese have the same lateral sound as seen in the words *labor* [**l**eɪbər] in English and *lali* [**l**a**l**i] 'forget' in Javanese. The last comparison on the consonant characteristics based on the manner of articulation is the glide sounds. The glides sounds, [j], [w], [r], [h], and [ʔ] are produced with little or no obstruction of the airstream in the mouth (Fromkin et al. 2008, p.225). Both English and Javanese share the same (Fromkin et al. 2008; Wedhawati & Arifin 2006). For example, *young* [**j**ʌŋ], *wide* [**w**aɪd], *row* [**r**oʊ], *hat* [**h**æt], and *button* [bʌ**ʔ**ən] in English. In Javanese, they can be found in the words *ayu* [a**j**u] 'beautiful', *lawa* [lɔ**w**ɔ] 'bat', *rawuh* [**r**awu**h**] 'to come', and *batere* [bʌ**ʔ**ərə] 'battery'.

Meanwhile, based on the consonant characteristics of the place of articulations, there are several points to be compared. Both English and Javanese has bilabial [p], [b], and [m]; alveolar [t], [d], [n], [s], [z], [l], and [r]; velar [k], [g], and [ŋ]; and glottal [h] sounds. In contrast, English has labiodentals [f] and [v]; interdental [ɵ] and [ð]; and palatal [ʃ], [ʒ], [ʧ], [ʤ], and [j] while Javanese has labiodentals [f] and [w]; retroflex[ʈ] and [ɖ]; and palatal [ʧ], [ʤ], [j] and [ɲ] (Fromkin et al. 2008; Wedhawati & Arifin 2006). The examples for all sounds described above are the same as the examples found in the example of consonant characteristics of the manner of articulation except for those which do not exist. The [ʈ] and [ɖ] are called as voiced retroflex stops (Hamann & Fuch 2008) which many English speakers do not use them at all (Peter 2006). They are defined as a segment where the tip of the tongue is curled upwards and backwards (Catford 1977 & Laver 1994 cited in Khatiwada 2007). The [ʈ] and [ɖ] are allophones, distinct sound variants of a same phoneme (Nordquist 2009; Mannell 2008). /ʈ/ is the phoneme of the allophone [ʈ] and [ɖ] as /ʈ/ has more environments than [ɖ]. This is derived from a T-chart data analysis: *sinthing* [sɪn**ʈ**ɪŋ] 'crazy', *thuthuk* [**ʈ**u**ʈ**uk] 'hit', *senthong* [sen**ʈ**oŋ] 'bedroom', *thukul* [**ʈ**ukul] 'grow', *bathang* [ba**ʈ**aŋ] 'corpse', *dhuwur* [**ɖ**uwur] 'high', *dhahar* [**ɖ**ahar] 'eat', *nedha* [ne**ɖ**a] 'eat', and *kedhaton* [ke**ɖ**aton] 'the palace of princesses'.

Besides the consonant characteristics, the comparison between English and Javanese in the sound inventory is on the vowels which are characterized in terms of the relative backness of the tongue (front, central, and back) and the height of the tongue or jaw (high, mid, and low) (Yule 2006; Aronoff & Ress-Miller 2003). Firstly, English has four front vowels (Fromkin et al. 2008): [i] in *feet* [f**i**:t], [ɪ] in *kill* [k**ɪ**l], [e] in *ledge* [l**e**ʤ], and [æ] in *bat* [b**æ**t]. To the contrary, Javanese has two front vowels (Wedhawati & Arifin 2006): [i] in *iki* [**i**k**i**] 'this', and [e] in *elok* [**e**lɔ**ʔ**] 'beautiful'. Javanese front vowel [ɛ] in *edi* [**ɛ**di] 'beautiful' is the allophone of [e] (Widada 1993). Secondly, the central vowel sounds of English consists of [a] in *pass* [p**a**:s] , [ʌ] in *but* [b**ʌ**t], [ə] in *abate* [**ə**beɪt], [ɜ] in *pertain* [pɜ:teɪn], and [u] in *food* [f**u**:d], while in Javanese there are only two sounds; [ə] and [a] in *banter* [b**a**ntə**r**] 'fast'.

Thirdly, the back vowel sounds in English are [ɒ] in *not* [n**ɒ**t], [ɔ] in *thought* [θ**ɔ**t], and [ʊ] in *took* [t**ʊ**k], while in Javanese, they are [u] in *kuru* [k**uru**] 'thin'; and [o] in *loro* [l**oro**] 'two' which has an allophone [ɔ] in *goroh*

[gɔrɔh] 'to lie'. Fourthly, the high vowels in English are [i], [ɪ], [ʊ], and [u], while in Javanese, they are [u] as in and [i]. Fifthly, the mid vowels in English are [ɔ:], [e], and [ɜ] while in Javanese, they are [e], [ə], and [o]. The last category is the low vowel. English has [ɔ], [a:], [ʌ], and [æ], but Javanese only has [a] (Fromkin et al. 2008; Wedhawati & Arifin 2006).

Furthermore, in many languages, there are vowels moving from one vowel colour to another which called diphthongs. For example, the diphthong [aɪ] is produced by a movement from the [a] to the [ɪ]. In English, there are eight diphthongs (Fromkin et al. 2008): [aɪ] in *by* [b**aɪ**], [eɪ] in *baize* [b**eɪ**z], [ɔɪ] in *toy* [t**ɔɪ**], [ɪə] in *hear* [h**ɪə**r], [eə] in *wear* [w**eə**r], [ʊə] in *tourist* [t**ʊə**rist], [aʊ] in *tout* [t**aʊ**t], and [oʊ] in *hold* [h**oʊ**ld]. To the contrary, Javanese does not have dipthongs (Wedhawati & Arifin 2006). Thus, to smooth in pronunciation, *y* is inserted, for instance, *gawean* [gawejan] 'job' (Hadiwaratama 2009).

Conclusion

In conclusion and not surprisingly, in regard to the sound inventories, English and Javanese are both similar and different in several respects to how their consonants and vowels are produced and where in the mouth they are produced. Moreover, by comparing two languages, it can be seen that some sounds exist in one language but does not exist in another. This can be understood as every language has different sound spectrum.

Acknowledgements or Notes

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